

PATENT ABSTRACTS OF JAPAN

(11)Publication number : 06-264306

(43)Date of publication of application : 20.09.1994

(51)Int.Cl. D01F 6/62
D01F 6/62
C12S 11/00
D01D 5/08
D01F 8/00

(21)Application number : 05-076354

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(22)Date of filing : 09.03.1993

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(54) BIODEGRADABLE MULTIFILAMENT AND ITS PRODUCTION

(57)Abstract:

PURPOSE: To obtain a biodegradable multifilament having high tensile strength and useful for fibers, etc., for industrial materials by melt-spinning a polymer consisting of poly(β -hydroxyalkanoate), subjecting the spun yarn to air cooling and successively drawing the yarn.

CONSTITUTION: A poly(β -hydroxyalkanoate) having about 750000 molecular weight and consisting of a copolymer of poly-3-hydroxybutyrate and poly-3-hydroxyvalerate in a molar ratio of 94/6 is blended with a nucleating aid such as boron nitride and a plasticizer such as triacetin and the blend is melt-spun from a spinneret having 0.3mm ϕ \times 36 holes at 140-220° C. The spun yarn is cooled by air kept at about 60° C and a straight type lubricant is applied to spun yarn and then the yarn is drawn to ≥ 1.2 times at one or two stages between a roller heated to 100° C and an unheated roller to provide the objective biodegradable multifilament for fibers, etc., for industrial materials used as fishing, agricultural and civil engineering uses having ≥ 2.0 g/d tensile strength.